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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,213	03/25/2004	Roberto Padovani	PA466C2	6572

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QUALCOMM, INC
5775 MOREHOUSE DR.
SAN DIEGO, CA 92121

EXAMINER	
PHUNKULH, BOB A	

ART UNIT	PAPER NUMBER
2661	

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/809,213	PADOVANI ET AL.	
	Examiner	Art Unit	
	Bob A. Phunkulh	2661	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 December 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,7,8,13,14,19-21,28-30 and 37-39* is/are rejected.

7)☒ Claim(s) *3-6,9,10,15-18,22-27,31-36 and 40-45* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on *25 March 2004* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/17/06; 2/9/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This communication is in response to applicant's 12/12/2005 amendment(s)/response(s) in the application of **PADOVANI et al.** for "**METHOD AND APPARATUS FOR BURST PILOT FOR A TIME DIVISION MULTIPLEX SYSTEM**" filed 03/25/2004. The amendments/response to the claims have been entered. No claims have been canceled. No claims have been added. Claims 1-45 are now pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 7, 13, 19-21, 28-30, 37-39 are rejected under 35 U.S.C. 102(b) as being anticipated by Kumar (US 5,748,677).

Regarding claims 1, 7, and 13, Kumar disclose an infrastructure element, comprising:

a modulator configured to time-division-multiplex a plurality of orthogonally covered digital data sequences and a sequence of pilot symbols to generate a sequence of digital values for transmission on a communications channel (the composite modulator 91 for modulating a reference signal 93 and the a plurality of data sequences, see figure 4 and col. 16 lines 19-41; the reference signal 93 is known in the

prior art as "pilot signal," see col. 5 lines 61-66, col.6 lines 28-39; the reference signal can be time-multiplexed, see col. 18 lines 61-67);

and a transmitter coupled to the modulator and configured to receive the sequence of digital values from the modulator, convert the sequence of digital values to an analog waveform, and transmit the analog waveform on the communications channel (the DAC 13 for converting the composite signal from digital to analog signal, see figure 4).

Regarding claims 19, 28, 37, Kumar discloses a communications unit, comprising:

a receiver configured to receive a time-division-multiplexed signal including a plurality of orthogonally covered data sequences and a sequence of pilot values (see col. 14 lines 62-67, where the reference signal includes pilot signal, see col. 5 lines 61-66, col.6 lines 28-39); and

a demodulator coupled to the receiver and configured to receive the time-division-multiplexed signal from the receiver and demodulate the plurality of orthogonally covered data sequences (composite signal demodulator 39, see figure 3).

Regarding claims 20, 29, 38, Kumar discloses the demodulator is further configured to use the sequence of pilot values (reference signal values, see col. 16 lines 32-36, to coherently demodulate the plurality of orthogonally covered data sequences, see col. 15 lines 16-30).

Regarding claims 21, 30, 39, Kumar discloses the plurality of orthogonally covered data sequences each includes a set of data values that has each been spread by an orthogonal sequence, there being a distinct orthogonal sequence assigned to each set of data values (the subcarrier signals represent the encoded (PN coded in CDMA system) source message, see col. 5 lines 11-14).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 2, 8, 14, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kumar in view of .

Regarding claims 2, 8, 14, Kumar fails to disclose that the modulator comprises an orthogonal cover element configured to exclusive-OR each bit of a sequence of digital data bits with a plurality of orthogonal sequences to generate the plurality of orthogonally covered digital data sequences.

Salter, on the other hand, discloses the modulator comprises an exclusive-OR gate for generating PN coded digital packets (see figure 2 and col. 7 lines 4-16). It is well known in the art that XORing the PN code with the data signal produces orthogonally covered digital signal (see cited references).

Therefore, it would have been obvious to one having ordinary skill in the art at the time of invention was made includes the teaching of Salter in the system taught by Kumar for producing widely used and available way of producing orthogonally covered PN coded digital data.

Allowable Subject Matter

Claims 3-6, 9-12, 15-18, 22-27, 31-36, 40-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed 1/17/2006 have been fully considered but they are not persuasive.

In response to the applicant's argument in page 11, Kumar discloses the following in col. 4 lines 26-48:

The function of converting the encoded and interleaved bit sequence into a digital signal representation is accomplished by composite signal modulator 11, which is shown in detail in prior art FIG. 2. If a plurality of simultaneously multiplexed signals is implemented in the transmitter system, then the encoded bit sequence is divided into groups of bits, each group consisting of one or a plurality of bits. Each group of bits may be independently modulated. The amount of time corresponding to the duration (extent)

of the signal for the bit information in one group is the "baud interval". Typically, in a multiplexed transmitter system, the signal lengths are all about equal and so the baud interval is characteristic of the overall system. The encoded bit sequence is subdivided into groups of bits by serial-to-parallel converter 9 which are subsequently modulated independently in composite signal modulator 11. If only one signal is transmitted (not including the reference signal), then serial-to-parallel converter 9 is not needed and only one bit group is propagated to composite signal modulator 11.

In col. 7 lines 4-18, Kumar further discloses that the signals are orthogonal to each others.

Therefore, Kumar discloses the transmitter generating a plurality of orthogonally covered digital data sequence.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any response to this action should be mailed to:

The following address mail to be delivered by the United States Postal Service (USPS) only:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

or faxed to:

(703) 872-9306, (for formal communications intended for entry)

Or:

The following address mail to be delivered by other delivery services (Federal Express (Fed Ex), UPS, DHL, Laser, Action, Purolater, Hand Delivery, etc.) as follow:

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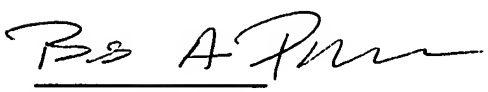
220 20th Street South
Customer Window, Mail Stop _____
Crystal Plaza Two, Lobby, Room 1B03
Arlington, VA 22202.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Bob A. Phunkulh** whose telephone number is **(571) 272-3083.** The examiner can normally be reached on Monday-Tursday from 8:00 A.M. to 5:00 P.M. (first week of the bi-week) and Monday-Friday (for second week of the bi-week).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor **Wellington Chin**, can be reach on **(571) 272-3134.** The fax phone number for this group is **(571) 273-8300.**

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Bob A. Phunkulh
Primary Examiner
TC 2600
Technology Division 2616
February 17, 2006